

**STATE OF VERMONT**  
**BEFORE THE PUBLIC SERVICE BOARD**

**Tariff filing of Citizens Communications    )  
Company, d/b/a Citizens Energy Services,    )  
requesting a rate increase in the amount of )  
40.02%, to take effect December 15, 2001    )**

**Docket No. 6596**

**DIRECT TESTIMONY OF**  
**PAUL CHERNICK**  
**ON BEHALF OF**  
**THE VERMONT DEPARTMENT OF PUBLIC SERVICE**

Resource Insight, Inc.

**MARCH 7, 2002**

*Summary: Mr. Chernick's testimony addresses prudence and excess costs in connection with Citizens Utility Company's purchase of power under the Vermont Joint Owners' contract with Hydro Québec.*

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Exhibit DPS-PLC-1	<i>Price Summary of Alternatives to the HQ-VJO Contract</i>
Exhibit DPS-PLC-2	<i>New England Inter-Utility Power Contracts Signed 1993</i>

1    **I.    Identification and Qualifications**

2    **Q:    State your name, occupation and business address.**

3    A:    I am Paul L. Chernick. I am the president of Resource Insight, Inc., 347  
4        Broadway, Cambridge, Massachusetts 02139.

5    **Q:    Summarize your professional education and experience.**

6    A:    I received an SB degree from the Massachusetts Institute of Technology in June,  
7        1974 from the Civil Engineering Department, and an SM degree from the  
8        Massachusetts Institute of Technology in February, 1978 in technology and  
9        policy. I have been elected to membership in the civil engineering honorary  
10       society Chi Epsilon, and the engineering honor society Tau Beta Pi, and to  
11       associate membership in the research honorary society Sigma Xi.

12        I was a utility analyst for the Massachusetts Attorney General for more  
13       than three years, and was involved in numerous aspects of utility rate design,  
14       costing, load forecasting, and the evaluation of power supply options. Since  
15       1981, I have been a consultant in utility regulation and planning, first as a  
16       research associate at Analysis and Inference, after 1986 as president of PLC,  
17       Inc., and in my current position at Resource Insight. In these capacities, I have  
18       advised a variety of clients on utility matters. My work has considered, among  
19       other things, the cost-effectiveness of prospective new generation plants and  
20       transmission lines; retrospective review of generation planning decisions; rate-  
21       making for plant under construction; ratemaking for excess and/or uneconomical  
22       plant entering service; conservation program design; cost recovery for utility

1 efficiency programs; and the valuation of environmental externalities from  
2 energy production and use. My resume is available upon request.

3 **Q: Have you testified previously in utility proceedings?**

4 A: Yes. I have testified more than one hundred and eighty times on utility issues  
5 before various regulatory, legislative, and judicial bodies, including utility regu-  
6 lators in twenty-five states, New Orleans, the District of Columbia, and Ontario;  
7 the Federal Energy Regulatory Commission; the Atomic Safety and Licensing  
8 Board of the U.S. Nuclear Regulatory Commission; and various siting and  
9 environmental regulators. A detailed list of my previous testimony is contained  
10 in my resume.

11 **Q: Have you testified previously on utility resource planning?**

12 A: Yes. I have testified on many utility resource-planning issues, including  
13 generation, transmission, and DSM planning, in many jurisdictions in the United  
14 States and Canada. My resume details this experience.

15 **Q: Have you testified previously before the Board?**

16 A: Yes. I testified in the following cases:

- 17 • Docket No. 4936, on Millstone 3;
- 18 • Docket No. 5270 on DSM cost-benefit test, pre-approval, cost recovery,  
19 incentives, and related issues;
- 20 • Docket No. 5330, on the conflict between the HQ purchase and DSM;
- 21 • Docket No. 5491, on the need for HQ power and the costs of alternative  
22 purchases;
- 23 • Docket No. 5686, on the avoided costs and water-heater load-control  
24 programs of Central Vermont Public Service Corporation (CVPS or  
25 Central Vermont);

- 1           •     Docket No. 5724, on CVPS's avoided costs;
- 2           •     Docket No. 5835, on design of CVPS's load-management rates;
- 3           •     Docket No. 5980, on electric-industry restructuring and avoided costs;
- 4           •     Docket No. 5983, on the prudence of the decisions of Green Mountain
- 5                 Power (GMP) regarding the HQ contract, avoided costs, and distributed
- 6                 utility planning;
- 7           •     Docket No. 6018, on the prudence of CVPS's decisions regarding the HQ
- 8                 contract, avoided costs, and distributed utility planning;
- 9           •     Docket No. 6107, on the prudence of GMP's decisions regarding the HQ
- 10                contract and distributed utility planning;
- 11           •     Dockets No. 6120 and 6460, on the prudence of CVPS's decisions
- 12                regarding the HQ contract;
- 13           •     Docket No. 6545, on the auction of the Vermont Yankee nuclear power
- 14                plant.

15   **Q: Have you been involved in other aspects of utility planning and regulation**  
16   **in Vermont?**

17   A: Yes. My other activities have included

- 18           •     participation in the CVPS and Vermont Gas DSM collaboratives;
- 19           •     preparation of testimony on the avoided costs of Green Mountain Power
- 20                 (GMP) in Docket No. 5780, not presented due to settlement of the case;
- 21           •     assisting the Department of Public Service (DPS or the Department) in the
- 22                 power-supply negotiations of the externalities investigation;
- 23           •     providing consulting support to the Vermont Senate on stranded costs and
- 24                 Vermont Yankee economics;

- 1       • assisting the Burlington Electric Department on distributed utility
- 2       planning;
- 3       • assisting the Department of Public Service and preparing draft testimony
- 4       on the Hydro Québec contract in Docket No. 6120, a Central Vermont rate
- 5       proceeding;
- 6       • assisting the Department of Public Service in the statewide collaborative
- 7       on distributed utility planning.

8   **Q: Are you the author of any publications on utility planning and ratemaking**  
9   **issues?**

10   A: Yes. I am the author of a number of publications on rate design, cost allocation,  
11   power-plant cost recovery, conservation-program design and cost-benefit  
12   analysis, and other ratemaking issues. These publications are listed in my  
13   resume.

## 14   **II. Introduction**

15   **Q: On whose behalf are you testifying?**

16   A: I am testifying on behalf of the Department of Public Service.

17   **Q: What is the purpose of this testimony?**

18   A: I address two topics related to the purchases by the Vermont Electric Division of  
19   Citizens Utilities Company (“Citizens” or “the Company”<sup>1</sup>) of power under  
20   Schedules B and C of the Vermont Joint Owners’ contract with Hydro Québec  
21   (HQ), which I will refer to as the HQ-VJO contract or the HQ contract. The  
22   Company’s purchases include both those it undertook directly and the purchases

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<sup>1</sup>Sometimes referred to as “CUC” or “VED” by others quoted in this testimony.

1 contracted by the Franklin Electric Light Company (“Franklin”), which Citizens  
2 acquired in 1993. The two topics are as follows:

- 3 • The prudence of the Company and Franklin in their decisions to purchase  
4 power under the HQ-VJO contract;
- 5 • The excess cost of the HQ-VJO contract, compared to the costs of prudent  
6 resources, in the rate year for Docket No 6596 (which I assume will be  
7 July 15 2002–July 15 2003).

8 The Company’s purchases from Hydro Québec under this contract are  
9 roughly \$13.057 million annually (for the 2000 test year, with adjustments  
10 through 2001), compared to \$21.45 million of total power costs for the same  
11 period, and \$38.7 million of total revenue requested by Citizens in this case.  
12 (Hieber Direct at 34, 2).

13 **A. Prudence**

14 **Q: In evaluating the prudence of the Citizens and Franklin purchases under**  
15 **the HQ contract, on what decision point do you focus?**

16 A: My testimony focuses on the period in 1991, leading to the decision on August  
17 28 to lock in the contract, that is, to give up the right to terminate the contract  
18 without penalty.

19 **Q: Please summarize your findings about the prudence of the Company’s**  
20 **actions in this period.**

21 A: In 1991, Citizens failed to review the cost-effectiveness of the HQ-VJO  
22 purchase, even though the economics of the purchase were clearly deteriorating.  
23 Despite this lack of analysis, Citizens (and Franklin) committed themselves to  
24 the HQ-VJO purchase on August 28.

1           To make matters worse, in failing to examine the economics of the HQ-  
2           VJO contract in light of the changes in circumstances during 1991, the  
3           Company failed to comply with the Board's requirements in Docket No. 5330  
4           and various of the sub-dockets.

5           The Board has already found Central Vermont and Green Mountain Power  
6           to have been imprudent in its purchase of power under the HQ-VJO contract (in,  
7           respectively, Docket Nos. 5701 and 6460, and 5983). Furthermore, in Docket  
8           No. 5983, the Board found that if Green Mountain Power and the Vermont Joint  
9           Owners had acted prudently and complied with the Board's requirements, they  
10          would have canceled the contract sometime in 1992, as the contract's economics  
11          continued to deteriorate (Docket No. 5983, Order of 2/27/98 at 240). The Board  
12          reached similar conclusions in Docket Nos. 6460 & 6120 with respect to Central  
13          Vermont.

14   **Q: Were any of the actions of Citizens in this period imprudent?**

15   A: Yes. Citizens was situated similarly to GMP and CVPS in 1991, and its actions  
16          were equally imprudent. I have identified the following actions (or lack of  
17          action) as imprudent:

- 18          • Failure to adequately monitor changing market conditions, as required in  
19                  Docket No. 5330.
- 20          • Failure to analyze the costs and benefits of the early lock-in.
- 21          • Failure to update the economic analysis of HQ prior to the lock-in.
- 22          • Failure to develop the resource alternative to the contract, as required in  
23                  Docket No. 5330-E.



- 1           •     Locking in the contract three months early, without conducting the  
2                     analyses listed above, and without receiving any concrete benefits from the  
3                     early lock-in.

4           These same failures were the basis of the Board's findings that CVPS and GMP  
5           were imprudent in their commitment to the HQ contract.

6     **Q: Was Franklin's situation different from that of Citizens?**

7     A: I do not see any material differences. In Docket No. 5330, Franklin essentially  
8           relied on the assurances of GMP and CVPS (Deposition of Hugh Gates, 6/6/00,  
9           at 19–20).<sup>2</sup> There is no indication either in the documents provided by Mr. Gates  
10           or in his deposition in Docket No. 6332, that Franklin performed any economic  
11           analysis of the HQ-VJO contract with then-current values, or monitored  
12           changing market conditions, in 1991 prior to the lock-in (Deposition of Hugh  
13           Gates in Docket No. 6332, 6/6/00, at 22).

14     ***B. Differences between Citizens and Other Vermont Utilities***

15     **Q: Are the Board's findings of imprudence on the part of GMP and CVPS**  
16           **applicable to Citizens?**

17     A: Yes. Citizens faced the same power market and had access to the same  
18           alternative supplies. The Company had the same opportunity to affect the lock-  
19           in decision.<sup>3</sup> Like CVPS and GMP, it failed to comply with Board requirements  
20           to develop an alternative supply plan and monitor changing market conditions

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<sup>2</sup>Mr. Gates was the head of the Franklin Electric Light Company at the time of the lock-in.

<sup>3</sup>Citizens was not a Vermont Joint Owner at that time, but the important decisions on the contract were made by the Participants in the HQ-VJO contract, including Citizens and Franklin.

1 and failed to re-evaluate the economics of the contract in 1991 before locking in  
2 to the HQ Contract.

3 Company Witness Richard Hieber raises several differences between  
4 Citizens, on the one hand, and CVPS and GMP, on the other (e.g., Hieber Direct  
5 at 6). Most of these considerations would have little or no effect on prudent  
6 utility planning. The only exception is Mr. Hieber's claim that transmission  
7 limitations would have restricted purchases by Citizens from the VELCo  
8 system. Were this correct, Citizens would need to purchase some power from  
9 Hydro Québec, or upgrade its transmission. Citizens has not demonstrated that  
10 these limitations require the Company to purchase even a portion of its power  
11 from Hydro Québec, let alone commit itself unquestioningly to the HQ-VJO  
12 contract. To the contrary, the evidence indicates that the Company could have  
13 relied entirely on U.S. power sources.

14 **C. *Estimating the Damages due to the Company's Imprudence***

15 **Q: How much less would the Company's power costs be today if it, or the Joint**  
16 **Owners as a whole, had not locked into the HQ-VJO contract?**

17 A: That would depend on what actions Citizens, the Joint Owners, and Hydro  
18 Québec would have taken after August 1991. In Docket No. 5983, the Board  
19 found that Green Mountain Power and the rest of the Vermont Joint Owners  
20 would have canceled the contract sometime in 1992, as the contract's economics  
21 continued to deteriorate (Docket No. 5983, Order at 240).

22 Because of the glut of power in the Northeast, the Company would have  
23 faced many options for short- and medium-term power purchases, at costs less  
24 than those of new resources. As a result, the Company would probably have

1 replaced the HQ-VJO purchase with a set of contracts covering the period until  
2 sometime after 2000. These contracts might have included purchases from some  
3 combination of Northeast Utilities, United Illuminating, New England Power,  
4 New York Electric and Gas, and NiMo.<sup>4</sup> Once the HQ-VJO contract was can-  
5 celled, Citizens might well have negotiated a contract with Hydro Québec at  
6 prices comparable those available from New England and New York utilities.

7 Due to its failure to reconsider and reject the HQ-VJO contract, the  
8 Company never developed a prudent mix of resources in the period from 1992  
9 through the present. Yet it is the extra cost of the HQ-VJO contract in the rate  
10 year, in excess of that of the prudent portfolio, that determines the cost of the  
11 Company's imprudence. Hence, as it did in Dockets No. 6107 and 6460 & 6120,  
12 the Board must select a proxy for the mix of resources that Citizens would have  
13 developed, absent imprudence.

14 **Q: What is your estimate of damages due to the Company's imprudence?**

15 A: I estimate that the rate-year cost of the Company's replacement power for HQ-  
16 VJO power would have been roughly \$45/MWh, \$3.8 million less than the cost  
17 of the HQ-VJO purchase.

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<sup>4</sup>The Company might also have started planning to participate in a utility-owned or NUG combined-cycle plant (and perhaps a combustion turbine, as well) around 2005, but that plant would never have been built, given the change in industry structure.

1    **III. Background**

2    **Q: Please explain how the lock-in vote came about.**

3    A: Under a Waiver and Release negotiated in April 1991, the Vermont Joint Owners  
4       had until November 30 1991 to decide whether to back out of the contract or to  
5       be locked into it. On August 28 1991, three months before the deadline, the  
6       Participants voted in a conference call (scheduled by fax the day before) to  
7       waive their rights to terminate the contract. This vote locked the Participants  
8       into the contract. Most subsequent litigation regarding the HQ-VJO contract has  
9       focussed on this decision.

10   **Q: How has the Board dealt with the costs of the HQ-VJO contract in prior**  
11       **regulatory proceedings?**

12   A: The Board has consistently found the lock-in to be imprudent and disallowed  
13       recovery of HQ-VJO costs to CVPS and GMP in excess of the costs of  
14       alternatives.

15           In Docket No. 5701, Central Vermont's 1994 rate case, the Board found  
16       that CVPS management had erred in inadequately analyzing alternatives prior to  
17       the lock-in and in inadequately pursuing reduction in its HQ-VJO entitlements  
18       after the lock-in (Order at 111–112, 118–119). The Board reduced CVPS's  
19       allowed rate of return by 75 basis points. Any ambiguity in the Board's finding  
20       of imprudence were resolved in CVPS's appeal of its next rate case (Docket No.  
21       6018), in which the Vermont Supreme Court ruled that the Board's  
22       determination of imprudence in the lock-in is final and not subject to further  
23       litigation, but that the size of future disallowances remained open. In  
24       consolidated hearings on CVPS's rate cases for 1998 (Docket No. 6120) and  
25       2000 (Docket No. 6460), the Board found that Central Vermont should have

1       procured power at costs lower than the HQ-VJO contract and approved a  
2       settlement disallowing a portion of CVPS's rate-year costs.

3             In GMP's 1997 rate case (Docket No. 5983), the Board found that GMP  
4       had been imprudent in locking into the HQ-VJO contract and disallowed 20% of  
5       GMP's HQ-VJO contract costs in the rate year, net of the benefits of sellbacks.  
6       This brought the net imprudence disallowance down to about 4% of GMP's  
7       costs.

8             In Green Mountain Power's 1998 rate case (Docket No. 6107), the Board  
9       found that "a prudent mix of resources could have been purchased in 1991-1992  
10      that, in aggregate, would have cost GMP between three and five-and-a-half  
11      cents per kWh from 1992 until the mid-2000s" (Docket No. 6107, Order at 44).  
12      The Board found (at 49) that disallowing all imprudent costs "would clearly put  
13      a significant strain upon GMP's financial viability" and imposed a smaller  
14      disallowance to avoid forcing the utility into bankruptcy.

15            This is the first Citizens rate case in which the prudence of the HQ-VJO  
16      costs has been litigated. The previous Citizens rate case, Docket No. 6332, was  
17      settled, with the entire rate increase dedicated to paying down deferred costs of  
18      the ice storm and DSM.

1    **IV. Prudence of the Early Lock-in Decision**

2    **A. Background**

3    **Q: Please describe the major regulatory events related to the HQ-VJO**  
4    **contract in 1991.**

5    **A:** In October 1990, the Board approved the overall HQ-VJO purchase. Most of the  
6    Participants, including Citizens, filed analyses justifying their shares of the  
7    contract in Docket No. 5330-A on December 12, 1990.

8            In September 1990, the Canadian National Energy Board issued an export  
9    license to Hydro Québec for the Joint Owners' sale, but imposed Condition 10,  
10   which linked final approval to compliance with Canadian environmental law.  
11   This condition worried both Hydro Québec and the Participants, due to uncer-  
12   tainties in how a future revocation of HQ's export license by the Canadian board  
13   (potentially many years into the contract) might interact with the contract's  
14   terms.

- 15        • Hydro-Québec was concerned that revocation would be considered to be  
16        government action after the lock-in dates of the contract, which would  
17        render Hydro Québec (as the party whose government required termina-  
18        tion) liable in damages for breach of contract.
- 19        • The Participants were concerned that revocation under Condition 10 would  
20        be considered a pre-lock-in event (a "condition precedent") even if it  
21        happened years later. In that case Hydro Québec would not be liable for  
22        damages from the cancellation and would be able to keep the front-loaded  
23        payments under Schedules B and C without paying any compensation to  
24        Vermont.

1           The Vermont Joint Owners and Hydro Québec first negotiated Amendment  
2           3, which would have extended the deadline for withdrawing from the contract  
3           without liability on the basis of objections to regulatory approvals to April 1992,  
4           and compensated the Participants for their front-load overpayments. That  
5           Amendment was filed with the Board on April 5, 1991.

6           On April 22, 1991, the Board issued an order in Docket No. 5330-E  
7           • finding that Amendment 3 constituted a major change in the contract,  
8           which it could not consider while Docket No. 5330 was still on appeal;  
9           • determining (at 5) that the proposed changes to the contract “favor Hydro-  
10          Québec more than they do Vermont’s utilities;”  
11          • requesting remand of Docket 5330 from the Vermont Supreme Court;  
12          • suggesting (three times, at 3, 11, and 13–14) that the parties negotiate “an  
13          amendment that *merely* preserved the status quo for a period of forty-five  
14          days, in order to allow consideration of the merits of Amendment No. 3  
15          following such remand” (original emphasis).

16          Instead of giving the Board the 45 days it requested, the Joint Owners filed  
17          a more limited Waiver and Release, and “announced that Hydro-Québec was  
18          likely to cancel the Contract if the Waiver was not executed by April 30, 1991”  
19          (Docket No. 5330-E, Order of 4/30/91), four days after this Waiver came before  
20          the Board. The Board approved the Waiver and Release, which pushed the lock-  
21          in date to December 1, 1991, and required that the Participants file any other  
22          necessary amendments to the Contract by September 15, 1991, which would  
23          give the Board the 45-day review period it had sought in the previous order.

24          In August the Canadian appeals court overturned Condition 10 and Hydro  
25          Québec offered to waive its potential exemption from damages were Condition

1       10 reinstated by the Canadian Supreme Court. Hydro Québec also concluded a  
2       sell-back agreement with Central Vermont and some other Participants, to re-  
3       duce their costs in the first years of the contract. At this point, the Participants  
4       agreed to give up their rights to cancel the contract based on regulatory ap-  
5       provals, locking into the contract on August 28 1991, three months earlier than  
6       required. I refer to this event as the “early lock-in” or the “premature lock-in.”

7       **Q: How is the remainder of this section organized?**

8       A: I discuss these two problems with the Company’s performance in this period:  
9       • failure to prepare for the lock-in decision, in violation of Board Orders;  
10      • errors in the lock-in decision itself.

11      **Q: Does the documentation provided by Citizens in this proceeding permit full**  
12      **review of the prudence of its HQ-VJO contract?**

13      A: No. In many cases, instead of identifying and referencing which documents  
14      were responsive to each discovery request, the Company directs the Department  
15      to search for relevant documents among the entire set of documents “previously  
16      produced” or among the filings and transcripts in Dockets No. 5330 and 5331  
17      (See DPS Set 3, responses 5(a)–(h), 10, 11, 25, 27, 30, 31, 33(b) and (c), 34, 35,  
18      39, 41, 42, and 44; and DPS Set 1 in Docket No. 6332, responses 18–24, 26, 52,  
19      53, 60, 65 and 66). The documents previously produced include more than 5,000  
20      pages with Bates Numbers, provided in Docket No. 6332.<sup>5</sup> The Department has  
21      not been able to review each of the thousands of pages of testimony, exhibits,  
22      transcripts, discovery responses, and other documents in Dockets No. 5330 and  
23      5331 to determine whether some document might be responsive to each of the

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<sup>5</sup>I refer below to these pages as “Citizens Documents.”



1 questions. Even for the previously-produced Citizens Documents, we cannot be  
2 sure that we have identified every page that Citizens might consider to be  
3 responsive to a particular question.

4 My conclusions in this testimony are based on the materials that I have  
5 reviewed, including documents to which Citizens discovery responses have  
6 directed me. It is not clear to me whether Citizens is aware of additional  
7 materials that it believes to be relevant to the issues in this proceeding.

8 ***B. Failures in Preparation for the Lock-in Decision***

9 **Q: In what ways did the Company fail to prepare for the lock-in?**

10 A: As discussed in more detail below, the Company

- 11 • failed to develop a specific alternative supply plan for replacing the HQ-  
12 VJO purchase in the event of cancellation, as required by Board  
13 instructions in Docket No. 5330-E.
- 14 • failed to monitor changing market conditions as required by Board  
15 instructions in Dockets No. 5330.
- 16 • failed to re-examine economics of HQ-VJO contract, in light of changing  
17 market conditions.

18 ***1. Alternative Resource Plan***

19 **Q: Please describe the Company's failure to develop a specific alternative**  
20 **supply plan.**

21 A: In 5330-E, the Board instructed the Participants to

1 seriously explore alternatives to the HQ contract, for use in the event that  
2 Hydro-Québec does ultimately withdraw from the Contract.... [P]rudent  
3 utility managers must actively seek out other options and consider  
4 negotiations with potential alternative sources of efficiency and supply  
5 within the next few months. (Order of 4/30/91 at 18)

6 Yet Citizens never developed an alternative plan for use in the event of  
7 termination of the HQ-VJO contract. It is not clear from Mr. Hieber's testimony  
8 that Citizens made any attempt to search for alternatives in 1991. His  
9 description of alternatives to the HQ-VJO contract focuses on transmission  
10 issues that would have arisen "[I]f *in the 1980s* the VED had decided to buy  
11 power from U.S. sources and transport it over the VELCo system..." (Hieber  
12 Direct at 10, emphasis added). Any consideration of alternatives in 1991 was  
13 limited to short-term purchases in case of delay:

14 After the VJO contract was approved by the Board, Citizens considered  
15 that power under the contract would be available and did not extensively  
16 explore other alternatives to the Hydro-Québec contract prior to the lock-in.  
17 Citizens did explore short-term alternatives (with Niagara Mohawk,  
18 Northeast Utilities and United Illuminating) *in case there were a delay in*  
19 *implementation*. (IR DPS 1-24 in Docket No. 6332, emphasis added)

20 **Q: Why was seriously exploring alternatives to the HQ-VJO contract and**  
21 **developing an alternative plan important?**

22 A: This omission was important for several reasons.

23 • The Company's obligation to its customers extends beyond meeting  
24 demand. If the HQ-VJO contract had been terminated, Citizens would have  
25 needed to have some idea about the *least-cost* alternative to HQ-VJO  
26 power. Without this alternative plan, Citizens was not prepared to move if  
27 the contract fell apart. If Hydro Québec canceled, Citizens would have  
28 been out looking to replace some 35% of its energy requirements, without  
29 any plan or guidelines (Hieber Direct at 9).

- 1       •     Given the Participants' stated concern that Condition 10 might result in  
2             cancellation of the contract, it was imprudent for Citizens not to have  
3             constructed an alternative to the HQ-VJO contract.
- 4       •     Development of alternatives was one of the justifications for seeking the  
5             Waiver and Release. In Docket No. 5330-E, the utilities argued that the  
6             Waiver would permit an opportunity to search for alternatives and improve  
7             their negotiating position with respect to potential alternate suppliers  
8             (Order of 4/30/91 at 3). Yet Citizens does not appear to have used the  
9             additional time provided by the Waiver and Release to develop a serious  
10            alternative plan, whether more expensive than the HQ-VJO contract or not.
- 11      •     If Citizens had a feasible alternative plan available, the Company would  
12             have increased its freedom of maneuver and bargaining position with  
13             respect to Hydro Québec, and would have been able to seriously consider  
14             opposing the premature lock-in. Since the Company had not developed an  
15             alternative plan, it had no idea what the cost of losing the HQ-VJO  
16             contract would be, and therefore how much risk it faced.
- 17      •     The Company's failure to comply with the Board's order to prepare for the  
18             possibility of losing the contract implies that Citizens was negligent; by its  
19             own admission, the Company assumed that the purchase was inevitable,  
20             and never considered the possibility that either party would cancel the  
21             contract, despite Board directives to prepare for that contingency.

22   **Q: Does the Company offer any reason for its failure to develop an alternative**  
23   **resource plan?**

24   A: Yes. Mr. Hieber contends that Citizens "lacked reasonable alternatives" to the  
25   HQ-VJO contract due to two problems. First, he asserts that Citizens was unable

1 to negotiate contracts with other utilities or with Hydro Québec that were  
2 attractively priced and had terms longer than five years. Second, Mr. Hieber  
3 claims that the transmission ties between Citizens and VELCo were too limited  
4 to permit its entire load to be met by U.S. sources, at least without additional  
5 transmission facilities (Hieber Direct at 10–12).

6 **Q: Is the Company’s alleged inability to negotiate a long-term contract a valid**  
7 **rationale for its failure to develop an alternative resource plan?**

8 A: No, for four reasons.

9 First, Mr. Hieber is wrong on the unavailability of power contracts for  
10 more than five years. On January 16, 1991, Northeast Utilities issued an offer to  
11 sell power to New England utilities over the period March 1, 1991 through  
12 October 31, 2004, a period of over thirteen years. In a letter of April 18, 1991 to  
13 the Department, Northeast Utilities reiterated its interest in long-term sales, and  
14 offered to tailor a contract to meet the specific needs of individual Vermont  
15 utilities. Mr. Hieber’s assertion that Citizens was able to negotiate only a five-  
16 year contract with NU may describe conditions in 1989, but not in 1991.<sup>6</sup>

17 Second, long-term power purchases had never been important to Citizens  
18 before. Citizens had been buying power from Hydro Québec under a series of  
19 five-year contracts for many years and had been satisfied with that arrangement.  
20 Citizens joined the HQ-VJO contract only when it became clear that Hydro  
21 Québec would not negotiate a better contract directly with Citizens, due to the  
22 “most-favored-nation” clause in Hydro Québec’s contracts with the Vermont

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<sup>6</sup>Citizens also claims to have been able to negotiate a short-term contract with United Illuminating, although as far as I can tell the details of the Northeast Utilities and United Illuminating offers were not provided on discovery.

1 Joint Owners and New York contracts, under which Hydro Québec might have  
2 to reduce prices to those customers if it offered better terms to any other  
3 customer. If Citizens actually limited its options by considering only *long-term*  
4 contract alternatives to the HQ-VJO contract, as Mr. Hieber claims, this was an  
5 artificial and unreasonable constraint.

6 Third, Citizens could and should have assembled a least-cost long-term  
7 portfolio from the options available, to compare with the HQ-VJO purchase.  
8 That portfolio would include the following:

- 9 • One or more of the best purchase deals available from the owners of  
10 existing capacity, through about 2005. This may have included purchases  
11 from a number of U.S. utilities, including Northeast Utilities, United  
12 Illuminating, New England Power, New York State Electric and Gas and/or  
13 Niagara Mohawk. A few other utilities and NUGs with uncommitted  
14 capacity might also have been potential suppliers.<sup>7</sup>
- 15 • New combined-cycle capacity or a NUG purchase, following the end of  
16 the period in which purchases from excess capacity were available.

17 My economic analyses of alternatives to the HQ-VJO contract in the  
18 Central Vermont and Green Mountain Power cases I list above in §I indicate  
19 that, given 1991 fuel-price forecasts and other market conditions, a variety of  
20 short-term purchases followed by a long-term combined-cycle or NUG  
21 entitlement would have been preferable to the HQ-VJO contract.

22 Fourth, the development of an alternative portfolio was not an optional  
23 exercise. The Board required that each Joint Owner develop a least-cost

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<sup>7</sup>Until the HQ-VJO contract was cancelled, Hydro Québec was unlikely to negotiate a competitive short-term arrangement with Citizens.

1 alternative to the HQ-VJO contract, whether or not that was less expensive than  
2 the contract, because Hydro Québec could cancel the contract.

3 Fifth, even Mr. Hieber recognizes that purchases from US sources were  
4 feasible.

5 If in the 1980s the VED had decided to buy power from U.S. sources and  
6 transport it over the VELCo system, the Company would either have had to  
7 pursue reinforcement of the VELCo system or to seek backup service from  
8 Hydro-Québec. The additional costs associated with upgrading the VELCo  
9 system only increased the costs of alternative supply options from New  
10 England in our least cost analysis. (Hieber Direct at 10)

11 Both options—upgrading the VELCo system and contracting for  
12 emergency power from Hydro Québec—were clearly feasible. It is not clear that  
13 any reinforcement on VELCo was needed, since Hydro Québec and NEPOOL  
14 (and virtually all other interconnected utilities) routinely provide one another  
15 with emergency power. Since Citizens would only need the emergency power if  
16 contingencies occurred at a time of high loads, very little of this power would  
17 have been needed and its price would not have been important in the economics  
18 of alternative supplies.<sup>8</sup>

19 **Q: Is it likely that Citizens could have secured a reasonable short-term**  
20 **contract from Hydro Québec in the place of its participation in the HQ-**  
21 **VJO contract?**

22 A: Yes. In fact, Citizens regarded its “best possible alternative” to be an  
23 independent five-year contract with Hydro Québec. However, Citizens claims  
24 (somewhat inconsistently) that this contract would either be “at a higher price”

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<sup>8</sup>Mr. Hieber’s criticism of the VELCo system serving Citizens is limited to the assertion that it is “not strong under contingencies at peak load” (Hieber Direct at 10).

1           that the HQ-VJO contract (IR DPS 3-31) or at a price “on a par with” the HQ-  
2           VJO contract (Hieber Direct at 6).

3           Had the contract been cancelled or delayed, Citizens would have been in a  
4           better bargaining position and should have been able to negotiate a lower  
5           purchase price, especially given its special relationship with Hydro Québec.

6   **Q: Has Citizens provided documentation supporting Mr. Hieber’s second**  
7   **claim, that transmission limitations prevented the Company from**  
8   **developing an alternative resource plan?**

9   A: No. Citizens has not provided any evidence to support Mr. Hieber’s assertion.  
10       The Company has not demonstrated that it needed to take *any* power from  
11       Hydro Québec (except in emergency situations), let alone *all* its power. Nor has  
12       Citizens shown that relieving any transmission limitations that might hamper its  
13       purchases from domestic sources would be prohibitively expensive, or even  
14       more expensive than the upgrade to the 120-kV line from Hydro Québec to  
15       accommodate the HQ-VJO contract.

16       When asked to quantify the capacity constraints to which Mr. Hieber  
17       alluded, Citizens replied, “Specific studies have not been made to quantify the  
18       firm limitation to Citizens, absent a supply from HQ” (IR DPS 3-3). Since  
19       Citizens does not know whether its ability to take power from the VELCo  
20       system is constrained, it also does not have any estimates or analyses of the cost  
21       to remove those hypothetical constraints. (IR DPS 3-4)

22       In fact, the evidence indicates that the Company’s entire load could have  
23       been served from its VELCo ties. Back in its Proposal for Decision in Docket  
24       No. 5331, Citizens claimed:

1           There is sufficient capacity in the transmission system for Citizens to take  
2           all of its power from VELCo if there were an outage on the Hydro Québec  
3           system (Transcript, October 17, 1989, at 84–86). (Citizens Documents at  
4           1173)

5           Also in its Proposal for Decision in that docket, Citizens cited the record as  
6           demonstrating that the transmission upgrades associated with the Hydro Québec  
7           purchase would allow Citizens to serve 75 MW (more than its entire 2000 peak  
8           load of 60 MW) with either Hydro Québec or US power:

9           The ability to switch all or part of its system between two distinct power  
10          systems comprised of different types of resources enables Citizens to utilize  
11          fully the resources available to it to take advantage of economic  
12          interchange and thus minimize power costs. Citizens' existing system is  
13          limited in transfer capability, both in size of individual load centers capable  
14          of being switched up to 55–60 MW whereas under the proposed project,  
15          Citizens will be able to switch up to 75 MW (100 MW - 25 for other  
16          Vermont utilities; Transcript, October 17, 1989, at 56–58). (Citizens  
17          Documents at 1169–1170).

18          The implication of this section is that Citizens could serve nearly all its  
19          current load from either Hydro Québec or VELCo without the upgrades, and  
20          considerably more with the upgrades.

21          In this docket, when asked whether VELCo had ever been unable to supply  
22          the entire Citizens load, the Company responded,

23          VED's records would have to be searched for such an incident but VED  
24          management for this function does not recall a time when VELCo could not  
25          supply VED when HQ's deliveries were out of service. (IR DPS 3-24(a))

26          And

27          VED believes that VELCo was able to supply sufficient power to the VED  
28          to avoid loss of firm load. (IR DPS 3-25(e))



1    **Q: Please summarize your review of Mr. Hieber's assertions justifying the**  
2    **failure of Citizens to seek out alternatives to the HQ-VJO contract?**

3    A: The first claim, that only contracts under five years duration were available, is  
4    simply wrong. His second claim, that Citizens could not purchase power from  
5    New England and New York suppliers due to transmission constraints, is  
6    certainly unsupported and is generally contradicted by statements from Citizens  
7    itself.

8    2. *Monitoring Changing Conditions*

9    **Q: Please describe the regulatory requirement to monitor changing conditions.**

10   A: The Public Service Board, in its Order in Docket No. 5330, required that each  
11   Joint Owner continually monitor contract economics, even after the lock-in,  
12   which was then expected to be much earlier, so that they would be ready to  
13   negotiate sellbacks (beyond those ordered by the Board) or take other actions if  
14   the contract were no longer cost-effective. As stated in the Order in Docket No.  
15   5983 (at 15) summarized these requirements,

16           a utility's obligations include continued monitoring, review, and assessment  
17           of participation in power projects, and, this continuing review and  
18           assessment process needs to be documented "so that its prudence can be  
19           evaluated when challenged."<sup>9</sup>

20           The 1988 Electric Plan (at I.2-6) also requires utilities to compile and  
21   utilize adequate information to support resource decisions:

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<sup>9</sup>The quoted matter is attributed to Docket 5132, 83 PUR 4<sup>th</sup> 532, 566 (Vt. PSB 1987).

1 [I]t is vital that an adequate flow of useful, timely information reach all  
2 decision-makers...Utility managers and regulators...must have an adequate  
3 flow of information...to make appropriate decisions....

4 It is essential that management understand the operating environment in  
5 depth. This understanding must be thorough and current to allow quick and  
6 knowledgeable reaction to changes in the strategic environment. Lack of  
7 understanding has led to precipitous and ill-advised commitments...in  
8 reacting to...short-lived opportunities. At a minimum, an adequate strategic  
9 analysis must include...continual monitoring.

10 The Company should at least have been monitoring changes in the market  
11 (such as regional economic factors, regional load and supply, and fuel price),  
12 compiling data, and alternative supply and conservation resources, especially  
13 since the cost-effectiveness of the HQ-VJO purchase was highly sensitive to  
14 market factors and the HQ-VJO contract was an immense financial commitment  
15 for Citizens and for Vermont as a whole.

16 **Q: Did Citizens comply with this requirement?**

17 A: No. Citizens made little effort to track changing market conditions, or even to  
18 identify the critical parameters and the values at which re-evaluation of the  
19 contract was necessary.<sup>10</sup>

20 **Q: Was Citizens aware in 1991 that the costs of the HQ-VJO contract might be**  
21 **problematic?**

22 A: Yes. But it appears that Citizens focused its concern on avoiding disclosure to  
23 the Board of the magnitude of HQ-VJO rate impacts. According to a hand-  
24 written document from Mr. Gates' files, which is unidentified but appears to be

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<sup>10</sup>In response IR DPS 1-23, Citizens stated that it did monitor market conditions, and referred the Department to documents previously provided. The documents do not provide any evidence that Citizens systematically monitored and analyzed changing circumstances in 1991.

1 notes from a meeting regarding testimony to be filed in 5330, the following  
2 exchange took place:

3 J.M. → BE EXPECTED TO SHOW SAVINGS ON RATES to customer.  
4 if you can project there is going to be a rate increase → Be  
5 prepared to tell them how much  
6 Savings in Dollars = Reduction in Rates.

7 C.U. (Marty) → Disagrees—Show only that it is the best decision to be  
8 made of the choices.  
9 The rate issue might be a trapping distractor  
10 Do not bring it up.

11 VPSSA—thinks there will be a rate shock.

12 Consistent with the notes of this meeting, Citizens did not provide an  
13 estimate of rate impacts in its 5330 testimony, but in response to an Oral Data  
14 Request (dated October 12, 1989), Mr. Hieber estimated that the HQ-VJO  
15 purchase would have increased rates 20% by 1994 (Citizens Documents, Bates  
16 No. 954).<sup>11</sup>

17 Within a few months of the lock-in, Citizens knew that the HQ-VJO  
18 purchase would result in more serious rate shock. According to an internal  
19 memo (12/31/91) from K. Perry to T. Bailey and J. Avery regarding sellback  
20 negotiations, Citizens was estimating an immediate rate increase of 33% to  
21 35%:

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<sup>11</sup>Mr. Hieber accepted the 20% value but downplayed his forecasted 2008 rate impact of 42.47% as “so speculative as to be of no value” (Citizens Documents at 950). Ironically, Citizens filed for a 34.5% rate increase in January 1992, nearly three-quarters more than the 20% increase Mr. Hieber had projected for 1994.

1 Opponents of the HQ/VJO Contract will ridicule HQ and CUC for negoti-  
2 ating an agreement that will force an immediate rate increase of 33% to  
3 35% for customers in the most economically depressed area of Vermont.  
4 (Citizens Documents at 1870)<sup>12</sup>

5 By January 1992, Citizens had filed for a 34.5% rate increase over three  
6 years. In a 1/6/92 interoffice memo, Citizens attributed this request primarily to  
7 “a step-up in price from HQ for their wholesale power” (Citizens Documents at  
8 719).

9 **Q: Would more-active tracking of market conditions have revealed significant**  
10 **changes in long-term trends?**

11 A: Yes. There were clear signs in 1991 of long-term changes that were unfavorable  
12 to HQ, including the following:

- 13 • Fuel-price forecasts were falling.
- 14 • The NEPOOL CELT report released on April 1, 1991 dramatically reduced  
15 projected load growth in NEPOOL, moving back the need date for new  
16 capacity from 1995 to 2000 and projecting large surpluses in the mid-  
17 1990s.
- 18 • Non-utility generators previously selected in utility solicitations, such as  
19 GMP’s CoGen Lime Rock and CVPS’s Sheldon Springs, were having  
20 difficulty selling their remaining output, indicating that the market value of  
21 power had fallen below their formerly attractive bid prices.<sup>13</sup>

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<sup>12</sup>It is not clear from the Citizens Documents exactly when Citizens recognized that the HQ-VJO contract would drive rate increases so much larger than its 1989 estimates. I am not aware of any market changes in later 1991 that would have made a similar assessment much different in the summer of 1991 than in December.

<sup>13</sup>In the 1991 IRP, CVPS indicated that the Sheldon Springs project was unlikely to be completed, because “of the declining need for power in Vermont and the Northeast due to the economic downturn” and because “a preliminary Department of Public Service analysis indicates

- 1       • New York was backing out of its Hydro Québec contract.
- 2       • The New York utilities were projecting large capacity surpluses, no need
- 3       for capacity until well after 2000, and sharply lower avoided costs (New
- 4       York Power Pool Avoided-Cost Filing, August 30, 1991).

5   **Q: How should these changes have affected the Company's evaluation of the**  
6   **HQ-VJO contract and the lock-in decision?**

7   A: Lower fuel prices, the availability of surplus capacity and energy from New  
8   England and New York utilities, and low market prices would cut heavily into  
9   the economics of the HQ-VJO contract. In addition, the removal of New York as  
10   a serious competitor for Hydro Québec power should have reduced the pressure  
11   on the Participants to lock in the HQ-VJO contract, and generally improved the  
12   bargaining position of Vermont utilities with respect to Hydro Québec.

13   **Q: Please describe New York's backing off from its Hydro Québec contract.**

14   A: In 1989, some New York utilities had signed a 1,000-MW contract (through the  
15   New York Power Authority) with Hydro Québec for twenty years of purchases  
16   starting in 1995 and 1996, at prices only slightly greater than those in the HQ-  
17   VJO contract. The drop-dead or final-lock-in date for this contract was  
18   originally set for December 1991.<sup>14</sup>

19       The New York utilities were finding that DSM was more successful than  
20   they had anticipated, that load growth was likely to be slower than previously

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that the need for power has declined" (1991 IRP at VI-5). In other words, given the low cost of oil and the plentiful power supply, Sheldon Springs (and most other NUGs) were not least-cost options in the near term.

<sup>14</sup>New York's regulatory approval process was very different from Vermont's, in part because of NYPA's role.

1 expected, and that the Hydro Québec contract would raise New York's 1999  
2 reserve margin to 42%.<sup>15</sup>

3 This trend was clear as early as April 1991, when the Long Island Lighting  
4 Company announced that it was reconsidering its 218-MW share of the  
5 purchase. The mayor of New York City had also requested that the utilities  
6 serving city loads (Con Ed and the New York Power Authority) reconsider the  
7 contract. In June 1991, Richard Saudek (Counsel for the Vermont Joint Owners),  
8 in a letter to Pierre Bolduc of Hydro Québec, mentioned the likelihood of a  
9 delay in the New York lock-in date, and the likelihood that the Vermont Board  
10 would want similar treatment for the Vermont utilities.

11 Agreement on delaying the New York decision from December 1991 to  
12 November 1992 was announced in August 1991—the same day as the  
13 Participants' lock-in decision.

14 **Q: Did Citizens recognize that the lagging interest of New York in its Hydro**  
15 **Québec purchase had implications for Vermont?**

16 A: No. Citizens considered that development to be essentially irrelevant to the  
17 Company's decision:

18 Based on our assessment that the New York utilities' situation was different  
19 than that facing utilities in Vermont, their actions did not seriously affect  
20 Citizens' assessment of Hydro-Québec's bargaining position. (IR DPS 1-66  
21 in Docket No. 6332)

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<sup>15</sup>Without HQ, the reserve margin would be only a couple points lower.

1    **Q: How should the changing situation in New York have affected the**  
2    **Company's view of the HQ-VJO contract and the lock-in decision?**

3    A: New York's reluctance to lock into its purchase from Hydro Québec should have  
4    influenced Citizens in the following ways:

- 5       • Since the Hydro Québec–New York sale was very similar to the HQ-VJO  
6       sale, New York's reluctance should have caused Citizens to question what  
7       the New York utilities might know that it did not.
- 8       • New York's declining interest in the Hydro Québec purchase greatly  
9       reduced the danger of Hydro Québec finding a better deal than the HQ-  
10      VJO sale and canceling its sale to Vermont.
- 11      • The reduced interest from New York should have improved Vermont's  
12      bargaining position with Hydro Québec.
- 13      • With the collapse of the New York contract, the troublesome most-favored-  
14      nation clause applied only for the HQ-VJO contract. Were the contract also  
15      cancelled, Hydro Québec would not longer have that constraint in its  
16      dealings with Citizens, and would be able to offer Citizens a competitive  
17      price.

18   **Q: How should the sharp reductions in New York avoided costs have affected**  
19   **the Company's planning?**

20   A: The New York Power Pool's avoided-cost estimates (released August 30 1991)  
21   were lower than the HQ-VJO contract, through at least 2004. If Citizens had  
22   sought out purchases from the New York utilities in this time period, it probably  
23   would have received some very attractive offers.

1     3.     *Economic Analysis of the HQ-VJO purchase in 1991*

2     **Q: Did Citizens analyze the economics of the HQ-VJO purchase in 1991 before**  
3     **the lock-in decision in August?**

4     A: No. The only economic analysis the Company performed was for its filing in  
5     5330-A, produced some time in 1990 (IR DPS 3-31, IR DPS 1-15(f) in 6332.)

6     **Q: Have you been able to determine what the Company's analyses would have**  
7     **indicated about the economics of the purchase immediately prior to the**  
8     **lock-in?**

9     A: Not exactly. So far as I can tell, the only analysis of the HQ-VJO contract that  
10     Citizens performed in the relevant period was for its filing in Docket No. 5330-  
11     A. Citizens has not provided any coherent documentation of this analysis, or any  
12     other power-supply analyses from 1991. I have not been able to piece together  
13     the Docket No. 5330-A analysis from the materials provides in the Citizens  
14     Documents. In any case, Citizens appears to have ignored all purchase options  
15     in its Docket No. 5330-A analysis, so it would be of little use in examining a  
16     realistic alternative in the summer or fall of 1991.

17             The situation is somewhat different for Central Vermont and Green  
18     Mountain Power, which prepared IRPs and other power-supply analyses in  
19     1991. I was able to use the analyses of Central Vermont and Green Mountain  
20     Power, adjusted for changes in fuel prices and other market conditions, to  
21     compare the HQ-VJO purchase to alternatives from the 1991 perspective. I  
22     found in Dockets No. 5983, 6018, 6107, and 6460 that there were better options  
23     than the HQ-VJO purchase in 1991. The Board agreed with me, in its orders in  
24     Dockets No. 5983, 6107, and 6120 & 6460.



1           The results for Citizens would be similar to those for Green Mountain  
2           Power and Central Vermont. Indeed, since Citizens was buying more of its HQ-  
3           VJO power early in the contract, when the contract was most over-priced, the  
4           results of a reasonable analysis in 1991 would have shown that the Citizens  
5           purchase from the HQ-VJO contract far exceeded the cost of alternatives.

6    **C.   The Premature August Lock-in Decision**

7    **Q:   Please describe the circumstances of the August lock-in decision.**

8    A:   The lock-in decision was made with unseemly haste: through a 10-AM telephone  
9           conference call with notice by fax only the day before. The participants were  
10          provided no written explanation of the decision and no analysis of the  
11          advantages and disadvantages of an early lock-in. No substantive discussion  
12          occurred among the participants.

13   **Q:   What did Citizens give up when it agreed to an early lock-in?**

14   A:   The Company gave up the benefits of delaying the final decision and an  
15          opportunity to negotiate better contract terms in exchange for its agreement to  
16          lock-in. The Company should have realized that the value of delay was  
17          enhanced by the facts that forecasts of market conditions were changing in a  
18          direction that was unfavorable to HQ, and that forecasts could fall further.  
19          Unfortunately, Citizens did not recognize that it would benefit from delaying the  
20          decision or gathering more information in the rapidly changing environment in  
21          August 1991.

22   **Q:   Before the lock-in, did Citizens analyze the benefits of delaying the**  
23          **decision?**

24   A:   Not so far as I have been able to determine. (IR DPS 3-30)

1     **Q: Then what was the basis for the Company's decision to lock-in early?**

2     A: Citizens was confident that the HQ purchase was the best option and it felt that  
3     in any event it could not affect the decisions of GMP and CVPS:

4             Citizens was in the position to accept or reject what was negotiated by  
5             CVPS/GMP with Hydro-Québec. Citizens, however, needed the capacity  
6             and believed that the contract was beneficial for Citizens. (IR DPS 1-17 in  
7             Docket No. 6332)

8     And

9             We understood at the time that, since the VJO had received regulatory  
10            approval for the contract, we were obligated to lock-in once Hydro-Québec  
11            informed us that it had obtained its regulatory approvals. Moreover,  
12            Citizens and the VJO believed it was to their benefit to lock-in. (IR DPS 1-  
13            63 in Docket No. 6332)

14    And

15            The Company relied on HQ as stated in Mr. Hieber's testimony and needed  
16            a contract to meet load requirements was determined to be the best  
17            economic long-term alternative for the VED. (IR DPS 3-2(c) (sic))

18    **Q: Did GMP and CVPS have valid reasons for locking in early?**

19    A: No. The Board has found that GMP and CVPS were imprudent in locking in  
20    early.

21    **Q: Could Citizens have affected the early lock-in decision?**

22    A: Yes. Citizens should have known that the economics of the HQ contract was in  
23    doubt in 1991. If Citizens had opposed the early lock-in on economic grounds,  
24    discussed the results of an unfavorable cost-effectiveness analysis with the other  
25    participants, or suggested to CVPS or GMP the possibility of a Board finding of  
26    imprudence in the future, it is unlikely that the Participants would have voted to  
27    lock in early.

1           There is no evidence that Citizens had voiced any such concerns or had  
2           any hesitation about voting for the early-lock-in (IR DPS 3-2(d)–(f)).

3   **Q: If the Joint Owners had waited until late November to decide on the lock-**  
4   **in, is it likely that the Participants would have decided to lock in?**

5   A: No. As GMP and CVPS were aware in 1991, the continuing decline in load  
6       forecasts, fuel-price forecasts, and market power costs cast doubt on the  
7       economics of the HQ contract. New York’s interest in its HQ contract was also  
8       waning. In Docket No. 5983, the Board found that if Green Mountain Power had  
9       acted prudently and complied with the Board’s requirements, GMP and the rest  
10      of the Vermont Joint Owners would have canceled the contract sometime in  
11      1992, as the contract’s economics continued to deteriorate:

12           The evidence establishes that the lock-in should not have occurred in  
13           August 1991. The evidence also establishes that, absent the lock-in, several  
14           other events were very likely to have occurred. The first is that continued  
15           monitoring of market conditions would have revealed that the regional  
16           economic downturn, reduced fuel prices and electricity demand, and  
17           increased generating surpluses were not merely short-term phenomena, but  
18           would likely have longer-range effects. The second is that, in light of this  
19           information, the economics of the Contract would have deteriorated further.  
20           Third, the evidence supports a conclusion that HQ would have been willing  
21           to extend the lock-in date further, at least until April and probably until  
22           November 1992. And fourth, with another year’s worth of market informa-  
23           tion and analysis, the Company would surely have concluded that the  
24           Contract no longer promised net benefits for ratepayers, and would have  
25           canceled it. (Docket No. 5983, Order at 240).

26   **Q: What would have been the basis for that cancellation?**

27   A: As the Board found in Docket No. 5983, either party could back out of the  
28       contract if it was not satisfied with a regulatory approval. In the late summer and  
29       fall of 1991, Citizens and the other Participants should have been aware that the  
30       cost-effectiveness of the contract—and hence the prospect for utilities’ recovery

1 of the contract costs—was very much in doubt. The utilities should therefore  
2 have concluded that certain of the conditions of the approval in VPSB Docket  
3 No. 5330 were no longer satisfactory, given the factual context.

4 **Q: Was Citizens prudent in locking into the contract, without an update to the**  
5 **analysis?**

6 A: No. It was imprudent of Citizens to make a hasty commitment to a contract that  
7 it should have known was economically doubtful.

8 **V. Estimating the Costs of Imprudence**

9 **A. The Framework for Estimating the Costs of Imprudence**

10 **Q: What is the normal process for computing the costs incurred due to an**  
11 **imprudent utility action or decision?**

12 A: The general process consists of the following three findings:

- 13 • The finding that a particular decision was imprudent.
- 14 • The identification of the actions the utility would likely have taken, if it  
15 had avoided the imprudent action, and then acted prudently.
- 16 • The determination of the cost of the likely prudent course of action.

17 **Q: Please describe the process of identifying the subsequent actions the utility**  
18 **would likely have taken, if it had avoided the imprudent action.**

19 A: This task primarily involves positive or predictive analysis, rather than a  
20 normative analysis. While the original prudence analysis considers what the  
21 utility *should* have done, the identification of subsequent actions primarily  
22 concerns what the utility *would* have done, had it avoided the imprudent action.

1           Since the purpose is to project the utility's decisions in a situation that did  
2           not arise, the subsequent-action analysis relies primarily on the utility's standard  
3           procedures, adjusted as necessary to reflect the requirement of prudent utility  
4           management with due regard for the utility's obligation to ratepayers. Thus, the  
5           analyses should be based on the information the utility possessed, as well as any  
6           information it should have known but failed to obtain. The subsequent actions  
7           should be projected from the utility's normal evaluation, adjusted only as  
8           necessary to be consistent with prudent management and the utility's obligation  
9           to ratepayers. Specific directives from regulators may establish some assump-  
10          tions and evaluation methods. Adjustments to the utility's normal decision-  
11          making criteria are justified only where those criteria were unreasonable,  
12          selected imprudently from the perspective of ratepayers, or would have led to  
13          decisions that would not have obtained required approvals from regulators.

14   **Q: Can analysis determine exactly what the utility would have done in the**  
15   **past, had it not taken the imprudent action?**

16   A: No. By their very nature, these historical "what-if" exercises are inexact. The  
17          regulators will never be able to know exactly what result the utility would have  
18          received, had it bargained hard with potential suppliers. In complicated  
19          processes, including utility supply planning, the outcome can be determined by  
20          any number of factors, including the order in which parties communicate with  
21          one another, their perceptions of one another's bargaining position, the actual  
22          and perceived influence of third parties (such as regulators) and the timing of  
23          analyses and communications.

1    **Q: How should regulators deal with these uncertainties?**

2    A: That depends to some extent on the range of the uncertainties. In some cases, a  
3       single outcome can be identified as being representative, and used for  
4       subsequent analysis. In other cases, regulators should examine the range of  
5       likely outcomes, and evaluate the damages for a number of those outcomes.

6           The actions in the same time frame of other, similarly situated, utilities that  
7       avoided the imprudent action may provide a guide to the likely actions of the  
8       imprudent utility. Using a range of prudent behaviors from other utilities avoids  
9       potential problems of dealing with vast numbers of possible actions, as well as  
10      the pitfall of assuming a perfect outcome.

11          In no event should regulators allow the utility to benefit from uncertainties  
12      created by the utility's own imprudence. Options that the utility imprudently  
13      failed to explore should not be eliminated from the analysis.

14   **Q: Please describe the determination of the cost of imprudence.**

15   A: The cost of imprudence is the difference between the cost of the actual action  
16      and the cost of the actions the utility would have taken had it avoided the im-  
17      prudent action.

18          This cost may be greater or less than the differential that would have been  
19      estimated at the time of the imprudent action. For power-supply decisions, the  
20      costs of the alternatives today may differ from previous forecasts due to changes  
21      in fuel prices, costs of capital, and other determinants, and due to changes in  
22      contractual arrangements (such as the retirement of units that would have served  
23      unit contracts). Hence, the costs of imprudence must be determined under the  
24      conditions that actually occurred, rather than those anticipated years earlier.

1 Even actions that were obviously imprudent may have no current cost  
2 consequences. For example, a utility that signs an exorbitantly expensive  
3 contract for power from a new resource that is never completed, and is  
4 subsequently able to obtain replacement power at a cost comparable to that of  
5 the prudent alternatives to the original contract, may incur no extra cost. No  
6 cost-based prudence disallowance would be appropriate in such a case.<sup>16</sup>

7 The cost consequences of imprudence may vary over time; an imprudent  
8 action may increase costs dramatically for some years, but actually decrease  
9 costs in other years. The disallowance for excess costs in the short term should  
10 not exceed the total present value of the excess cost over time. It is therefore  
11 appropriate to look ahead and determine whether the consequences are likely to  
12 reverse in the future.

13 ***B. Application of the Framework to the HQ-VJO Contract***

14 **Q: What would likely have happened to the HQ-VJO contract if the**  
15 **participants had delayed the lock-in decision from late August to the end of**  
16 **November, and used the intervening three months to continue analyzing**  
17 **their options?**

18 A: If the participants had prudently analyzed the costs and benefits of the HQ  
19 contract, they would have almost certainly rejected the contract as it then  
20 existed. The Burlington Electric Department had already determined that its HQ  
21 share was not cost-effective, and confirmed the same result for Washington  
22 Electric Cooperative's share in September.

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<sup>16</sup>Nonetheless, the regulator might well decide to reflect the utility's poor planning process in some other manner, such as reducing its allowed return.

1           If the participants were unwilling to cancel the contract by the end of  
2           November, prudent analysis of the contract economics should at least have led  
3           the Participants to seek to extend the lock-in deadline, perhaps to the April 30,  
4           1992 date proposed in Amendment 3. As Joint Owners' Representative Saudek  
5           observed in his June 1991 letter to Hydro Québec, any further delay in the  
6           deadline was likely to trigger a reopening of the Board's analysis of the contract.  
7           The Board might also have forced this issue on CVPS in Docket 5491, a rate  
8           case that was pending in August 1991, had the lock-in not rendered further  
9           proceedings moot.

10           In Docket No. 5983, the Board found that the contract would have been  
11           cancelled in early 1992.

12    ***C. The Effect of the Decision to Accept the HQ Contract on Current Costs***

13    **Q: How much lower would the Company's power costs be today if it, or the**  
14    **Participants as a whole, had not locked into the HQ contract?**

15    A: That would depend on what actions Citizens, the Joint Owners, and Hydro  
16    Québec would have taken after August 1991, had Citizens and the Participants  
17    not agreed to the premature August lock-in. In Docket No. 5983, the Board  
18    found that continuing decline in load forecasts, fuel-price forecasts, and market  
19    power costs, plus likely re-examination of the contract by the Board, would have  
20    led to the termination of Schedules B and C.

21           In the event of termination, Citizens might conceivably have opted to  
22    replace the HQ contract with another long-term single-source contract, but few  
23    major long-term power-purchase commitments were made by New England  
24    utilities after the end of 1991. I doubt that Citizens would have been able to



1 contract for such a purchase and get it approved before falling market prices  
2 rendered it uneconomic. Citizens would more likely have purchased power  
3 primarily on the short- and medium-term market, or an equivalent offer from  
4 Hydro Québec.

5 **VI. Excess Rate-Year Costs of the HQ-VJO Contract**

6 **Q: What is the Company's estimate of the excess rate-year costs of the HQ**  
7 **contract?**

8 A: For a 2001 rate year, Citizens estimates market price to be \$3 million less than  
9 the cost of the HQ purchase in the next 12 months, based on an assumed market  
10 price of \$45/MWh, "additional benefits" of \$4/MWh, and an average HQ power  
11 cost of \$63.4/MWh (Hieber direct at 34).

12 **Q: How much would Citizens have paid to replace the HQ-VJO contract in the**  
13 **rate year had it prudently managed its power supply in the early 1990s?**

14 A: Depending on (1) the exact mix of base, intermediate, and peaking resources,  
15 (2) the duration of each contract, and (3) the details of contract pricing that  
16 Citizens could have negotiated, I project that prices at a 75% capacity factor of  
17 individual contracts in 2002/03 would have been between 3¢kWh and 6¢kWh.

18 Exhibit DPS-PLC-1 summarizes the costs for the 2002/03 rate year of  
19 various power supplies that Citizens could have lined up, from 1991 through  
20 today. Each alternative includes energy, capacity, and (where the data are  
21 available) transmission charges, and each alternative is at least as dispatchable  
22 as the HQ-VJO contract. The alternatives are as follows:

- 1       • In February 1991, Northeast Utilities offered Central Vermont three  
2       purchase options: a mix of specific nuclear and oil plants, slice-of-system  
3       power, and an oil block consisting of Middletown 4 and Montville 6. The  
4       NU offers would have cost about \$51/MWh for the Montville-Middletown  
5       Oil Block and \$48/MWh for system power. Citizens would dispatch the  
6       Oil Block at a relatively low capacity factor, and replace some of its  
7       \$37/MWh energy with off-peak energy purchases at \$27/MWh and on-  
8       peak energy averaging \$35/MWh (less in most hours).
- 9       • In early 1992, New York State Electric and Gas (NYSEG) offered Central  
10      Vermont two choices in power-purchases. NYSEG's Offer A was less  
11      expensive than the HQ-VJO purchase and would have cost \$56/MWh in  
12      2002/03. Since the energy charge in this offer was \$43/MWh, Citizens  
13      could have reduced the total cost to \$47/MWh by using only economy  
14      energy, and lowered it even further by using the NYSEG energy in high-  
15      priced hours and economy purchases in the rest of the hours.
- 16      • The New Hampshire Electric Coop's 1995 contract with Central Vermont  
17      provides for a take-or-pay Base Block of 2.75 MW at an annual 54%  
18      capacity factor, with specific monthly kW and kWh deliveries, for May 1  
19      1995 through October 1 2006. This portion of the contract will cost about  
20      \$29/MWh. Supplementing the Base Block with Central Vermont's incre-  
21      mental energy to bring it to a 75% capacity factor would raise the price to  
22      about \$30/MWh.<sup>17</sup>

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<sup>17</sup>Generally, a higher capacity factor resource would have a lower price per MWh. This situation is reversed for the CVPS-NHEC contract during 2002/03.

- 1           •     There were at least eleven contracts negotiated by eight New England  
2                   municipal utilities in 1992 and signed in 1993 to purchase power over  
3                   periods of 6–12 years from Boston Edison, NEPCo, or Northeast Utilities.  
4                   The five municipal-utility contracts for which I can project a price for  
5                   2002/03 will cost \$44–61/MWh.<sup>18</sup> These contracts are generally structured  
6                   as system power purchases, although the prices are sometimes tied to fuel  
7                   prices at a particular plant and availability of energy is sometimes  
8                   conditioned on the availability of at least one or two of a group of plants.  
9                   The inter-utility contracts also generally have greater flexibility in energy  
10                  deliveries and capacity adjustments than the HQ contract. The cost of some  
11                  of these resources would also be reduced by economy purchases. These  
12                  contracts are described further in Exhibit DPS-PLC-2.
- 13          •     In 1995, the Burlington Electric Department negotiated contracts with NU  
14                  and NYSEG for purchases from May 1998 through 2007 and 2009,  
15                  respectively. The contracts were signed in March 1996. The prices in these  
16                  contracts for 2002/03 are equivalent to \$42/MWh at the 75% capacity  
17                  factor of the HQ-VJO contract. The Burlington contracts represent very  
18                  flexible power-supply arrangements. There is no minimum energy take,  
19                  energy is a majority of the purchase price, and energy prices vary between

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<sup>18</sup>The other contracts are mostly based on cost of service, which I cannot project (especially for the utilities that have divested their generation). One has expired. I also excluded the sale from Northeast Utilities subsidiaries to Madison, since it had the following unusual features. First, it was an all-requirements contract, including reserves and placing the risk of load changes on the seller. Second, Central Maine Power was disputing Madison's right to change suppliers, and Northeast Utilities bore litigation risk and uncertain wheeling costs. I also excluded NEPCo's sale to Shrewsbury, which was set at the lesser of a fixed schedule and cost of service.

1 peak and off-peak. Burlington has the option of changing the capacity of  
2 the purchases over a wide range, on two months notice: from 2.5 MW to  
3 7.5 MW for the NU contract, and 3 to 10 MW for the NYSEG contract.  
4 Under these circumstances, the sellers cannot count on above-market (or  
5 above-cost) prices in one year balancing below-market prices in another  
6 year; the annual prices in the contract must represent a reasonable  
7 approximation of the price at which the seller would have been willing to  
8 sell in that year, for any length contract.

9 • A short-term supply contract signed in February 2002 for the rate year  
10 would cost about \$33/MWh, based on NatSource broker forward contract  
11 prices for energy and capacity, adjusted to match the HQ-VJO contract  
12 scheduling.

13 **Q: How did you estimate the effect of HQ-VJO scheduling on the price of**  
14 **broker forward contracts that it displaces?**

15 A: I undertook several steps. First, I reviewed the scheduling adjustment proposed  
16 by Citizens, as documented in the spreadsheet "Set3 Response 12a\_1.xls." I  
17 determined that this analysis was conceptually flawed, and confirmed that  
18 Citizens has not scheduled its HQ-VJO power as efficiently as it supposes. I  
19 then computed my own estimate of the scheduling value of the HQ-VJO  
20 contract.

21 Citizens proposes the following adjustments to the market value of its  
22 power from the HQ-VJO purchase:

23 • Schedule HQ power to be delivered at 95% capacity factor in the eight  
24 months of 2000 with the highest actual average market energy prices, and  
25 25% in the three lowest-cost months, rather than at 75% in each month.

- 1       •     Schedule deliveries to the hours with the highest expected market prices  
2             (rather than equally in all hours) within each week, assuming a 75%  
3             capacity factor for each week.
- 4       •     Schedule deliveries in the three low-priced months (for which he assumes  
5             25% capacity factors) to the highest actual hours in those months, rather  
6             than in average hours.

7             The assumptions behind these proposed adjustments are obviously  
8             mutually inconsistent. Citizens cannot schedule power for eight months at a  
9             95% monthly capacity factor, and then schedule within each week of those  
10            months at a 75% capacity factor. In fact, scheduling any month at 95% capacity  
11            factor would make little sense, since that would force Citizens to take about half  
12            the energy in the off-peak hours of the high-priced months, rather than the  
13            generally higher-priced peak hours of a relatively low-price month. Nor can  
14            Citizens improve the value of the Hydro Québec power in the lower-price  
15            months by scheduling it at 75% capacity factor (rather than flat through month)  
16            and also by scheduling it at 25% capacity factor.<sup>19</sup>

17            In addition, the first and third scheduling adjustments assume perfect  
18            information. Citizens did not know in August 1999 (when monthly deliveries for  
19            the November–October power year are scheduled) that October would be among  
20            the highest-price months in 2000, or that July and February would be among the  
21            lowest. The monthly schedule of HQ-VJO deliveries to Citizens in 2001 did not  
22            include the wide swings in capacity factors assumed in the scheduling analysis,  
23            and was not weighted towards the highest-priced months. Nor could Citizens

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<sup>19</sup>The spreadsheet also indicates that Citizens became confused about which months were high-cost in 2000 and used the prices of some relatively expensive months twice.

1 schedule in late February the delivery of Hydro Québec power in the actual  
2 highest-priced weeks of April, since the highest-priced hours could not be  
3 identified until the end of April.<sup>20</sup>

4 **Q: Should forward market prices be adjusted in any way to reflect the**  
5 **scheduling of HQ-VJO energy deliveries?**

6 A: Yes. I would expect Citizens to schedule delivery of HQ-VJO power in the  
7 higher-priced peak hours, to the extent feasible. About 61% of the contract  
8 energy at 75% can be delivered in the on-peak hours. So the first adjustment to  
9 market prices is to use a 61:39 weighting of peak and off-peak energy prices,  
10 rather than a weighting based solely on the number of hours in each period  
11 (about 46% on-peak).

12 In addition, prices in some off-peak hours (especially weekends during the  
13 business day) tend to be predictably higher than the average for the off-peak  
14 hours, and Citizens can schedule more of the off-peak deliveries in those higher-  
15 priced periods.

16 **Q: What is your estimate of the scheduling benefit of the HQ-VJO contract?**

17 A: I computed the average market energy price for 2000 and 2001, weighting  
18 NEPOOL's hourly energy prices by the Company's deliveries of HQ-VJO  
19 energy in each hour. The resulting average was 3% higher than the simple 61:39  
20 weighting of the peak and off-peak energy prices. I included this 3% adder in  
21 the cost of the market-forward contract that I reported above.

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<sup>20</sup>Citizens certainly could not schedule delivery of March power in the highest-priced hours of September, as in the scheduling computations.

1    **Q: Should the market price be adjusted for externalities, as Mr. Hieber**  
2       **suggests?**

3    A: No. The fact that Hydro Québec is selling this power to Citizens under the HQ-  
4       VJO contract, rather than to Citizens under some other contract, or to some  
5       other customer, has no environmental benefits. The HQ-VJO contract does not  
6       change the amount of hydroelectric energy that Hydro Québec has available in  
7       2002–2003. Regional dispatch is based on the economics of bid prices, and  
8       essentially the same plants are dispatched, regardless of system power contracts.

9           Mr. Hieber does not identify any actual environmental benefits that have  
10       resulted from the HQ-VJO contract.

11   **Q: How do the prices of the alternative supplies that Citizens might have**  
12       **acquired since 1991 compare to what Citizens will be paying for power**  
13       **under the HQ-VJO contract in the 2002–2003 rate year?**

14   A: In his testimony in this docket, Department Witness Bruce Biewald finds that  
15       Citizens will be paying \$63.2/MWh in 2002 and \$63.8/MWh in 2003. This is an  
16       average rate-year cost of \$63.5/MWh and a total cost of \$13.1 million for 206  
17       GWh.

18   **Q: What portion of the cost was due to the Company's imprudence?**

19   A: If the average cost of the Company's alternative portfolio were \$45/MWh (in the  
20       middle of the range I develop above), the Company would pay 29%, or \$3.8  
21       million, less than for the HQ-VJO contract.

1     **Q: Will any these contracts exceed the cost of the HQ-VJO contract in later**  
2     **years?**

3     A: I have looked at this issue in prior cases. According to my previous analyses,  
4     these contracts would remain at lower cost than the HQ contract until their  
5     termination.

6     **Q: Are the costs of imprudence that you have estimated the same as the**  
7     **uneconomic costs estimated by Mr. Biewald?**

8     A: No. Mr. Biewald's testimony concerns the long-run economic usefulness of the  
9     HQ-VJO contract using today's information about the rate year and beyond. My  
10    analysis is concerned with what Citizens would be paying in the rate year if it  
11    had been prudent in the early 1990s, while Mr. Biewald's is concerned with  
12    what Citizens would pay were it to replace the HQ-VJO contract on a forward-  
13    going basis at current expectations. Mr. Biewald thus compares the cost of the  
14    contract to a current market-price forecast, appropriately including current  
15    prices for power to be delivered in 2002 and 2003. The prices he reports for  
16    those years are different from the costs of resources that Citizens could have  
17    acquired in the early 1990s.

18    **VII. Conclusions and Recommendations**

19    **Q: Please summarize your conclusions on the prudence of the Company's**  
20    **purchase from Hydro Québec.**

21    A: The Company was imprudent in its analyses during 1991 in  
22       • violating the Board's order to prepare an alternative plan in the event that  
23       the HQ-VJO contract was terminated.



- 1       •     failing to monitor prudently the changing conditions in the markets for
- 2             power and fuels.
- 3       •     failing to analyze the costs and benefits of the early lock-in.
- 4       •     failing to update the economic analysis of the HQ-VJO contract prior to
- 5             the lock-in decision.

6     **Q: Please summarize your conclusions about the effects of that imprudence.**

7     A: Had Citizens contracted for a mix of market-priced purchases in the early 1990s,  
8       it would probably be paying around \$45/MWh in the rate year (including  
9       capacity charges), rather than the \$63.5/MWh of the HQ-VJO contract. This  
10      prudent supply mix would cost about \$3.8 million less than the HQ-VJO  
11      contract.

12    **Q: Does this conclude your direct testimony?**

13    A: Yes, at this time. However, certain discovery matters remain outstanding,  
14      including a promised supplementary response not yet received. Accordingly, I  
15      must reserve the right to amend or supplement this testimony at a later time.

## Exhibit DPS-PLC-1:

### Price Summary of Alternatives to the HQ-VJO Contract (per MWh)

*Rate Year July 2002–June 2003*

#### NU Offers to CVPS

Oil Block (Montville & Middletown)	\$50.7	Computed for 75% capacity factor. Less-expensive market energy would be substituted in some hours.
System Power	\$48.5	Computed at 75% capacity factor.

#### New York Utility Offers to CVPS

NYSEG	\$55.7	Computed at 75% capacity factor. Use of market energy would save over \$10/MWh.
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#### Municipal Utilities' Purchases

NEPCo to Littleton <sup>a</sup>	\$44.1	Baseload capacity at 100% capacity factor. Cost projection is net of Newbay buyout cost.
NEPCo to Braintree <sup>a</sup>	\$43.5	Baseload capacity at 100% capacity factor. Cost projection is net of Newbay buyout cost.
NEPCo to Taunton <sup>a</sup>	\$44.7	Baseload capacity at 100% capacity factor. Cost projection is net of Newbay buyout cost.
CL&P & PSNH to Danvers	\$61.1	50/50 mix of baseload and intermediate capacity. Baseload at 100% capacity factor; intermediate at 50%.
PSNH to Littleton	\$61.1	50/50 mix of baseload and intermediate capacity. Baseload at 100% capacity factor; intermediate at 50%.

#### NHEC Purchase from CVPS

\$29.7	Base capacity and energy with incremental energy to 75% capacity factor.
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#### Offers to BED

from NU	\$42.3	Computed at 75% capacity factor and 63/37 on-peak/off-peak ratio.
from NYSEG	\$43.4	Computed at 75% capacity factor and 63/37 on-peak/off-peak ratio.

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#### Note:

<sup>a</sup> The costs of the NEPCo-Littleton, NEPCo-Braintree and NEPCo-Taunton contracts include compensation for NEPCo's payment to buy out the Newbay NUG contract; I have reduced the projected capacity cost to reflect pricing without the Newbay payment (about \$60/kW-yr., or 1¢/kWh).

## Exhibit DPS-PLC-2:

### New England Inter-Utility Power Contracts Signed in 1993

Seller	Buyer	Contract Date	Start Date	End Date	Duration (years)	Capacity	Capacity Price	Energy Price	Flexibility	Other Notes
NEPCo	Reading	2/2/93	11/1/93	10/31/99	6	6 MW through 1994, then 15–25 MW	\$138/kWh in 1992, rising with 105% of GDPIPD	W-92 NEP fuel cost	For > 15 MW, notice required by 6/1/93	
NEPCo	Shrewsbu	8/10/93	11/1/93	10/31/04	11	17 MW in Winter '97; varies by season & year	Separate base, int and peak, fixed and rises ~4X in 11 years	\$15 Base, esc. with GDP. \$25 Int, w/ #6 oil. \$50 Peak w/ #2 oil.	Many complex options, limited by mix and basis for change.	NOT updated for Newbay buyout amendment. System power.
NEPCo	Littleton	11/10/93	11/1/94	10/31/04	10	3 MW	\$255/kWh in '94 rises ~2%/yr	\$15, rises w/ GDPIPD.	Option to extend to 2024	~\$60 of capacity cost is for Newbay buyout
NEPCo	Braintree	11/10/93	11/1/94	10/31/04	10	2 MW	\$254/kWh in '94 rises \$24.75/yr	\$15/MWh, rises with GDPIPD.	Option to extend to 2024	~\$60 of capacity cost is for Newbay buyout
NEPCo	Taunton	11/10/93	11/1/95	10/31/05	10	10 MW	\$159/kWh in '95 rises ~13%/yr	\$15/MWh, rises with GDPIPD.	Option to extend to 2024	~\$60 of capacity cost is for Newbay buyout
BECo	Braintree	8/19/93	11/1/94	10/31/04	10	1.7 MW to 26.6 by year	Fixed (\$205/kWh in '95) rising ~4%/yr.	System average cost.	Complex. Cut 50% if needed w/ short annual notice. Etc.	Contract demand.
PSNH	Princeton	4/9/93	1/1/93	12/31/04	12	0.75 MW total (varies)	Fixed & rising fast (CT from \$35 to \$135/kWh; Merri 1 from \$110 to \$410/kWh).	Unit cost	6 mos. notice for +20% or -10%; Post-'99, 2 yrs. notice for -20%/yr. cum.	Merimac 1, 2, CT; Newington; Wyman; possible substitution
CL&P & HPEC	Princeton	4/9/93	11/1/93	12/31/04	11	1.75 MW + total (varies)	Fixed by unit (rising slowly with 2x jump in 2000)	Unit cost	see PSNH	Middletown, S. Meadow; Hydro; Millstone; Subst. possible
CL&P & WMECo	Madison	8/5/93	9/1/94	12/31/04	10	40–50MW	Fixed (rising irregularly from \$45/kWh in '94 to \$125/kWh in '03)	Fixed peak & off (peak rises from \$32/MWh in '94 to \$62/MWh in '03)	After '98, 2 yrs. notice for full or partial termination	RQ (partial, the full)
CL&P & PSNH	Danvers	8/17/93	11/1/94	10/31/04	10	Fixed base, Int; Variable peak	Separate base, int and peak, fixed and rises 3x in 10 years	Base fixed. Int. & Peak vary with Norwalk Hbr fuel, fixed heat rate	Mix restricted, but after '99, 2 years notice to cut 20%/yr.	
CL&P & PSNH	Littleton	8/31/93	11/1/94	10/31/04	10	8-14 MW base, 7-9 MW int.	Separate base, int. and peak, fixed and rising. S. #6 oil and fixed heat rate	Base is fixed & rises. Int. & pk vary with 1%-rising. S. #6 oil and fixed heat rate	6 mos. notice for 30% more MW. Complex for cut w/ or w/o change in CR	A subset of certain units must operate for deliveries.